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CRANE CO. 757 THIRD AVENUE NEW YORK, N.Y. 10017 **SEP 15 1989**

THOMAS UNGERLAND  
ASSOCIATE GENERAL COUNSEL

File: \_\_\_\_\_

September 14, 1989

Ms. Jean W. Sutton  
Office of the Solicitor  
U.S. Department of the Interior  
686 Federal Building, Fort Snelling  
Twin Cities, Minnesota 55111

Re: Crab Orchard - National Wildlife Refuge  
Information Request

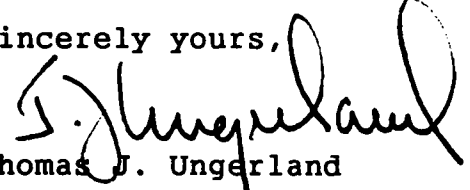
Dear Ms. Sutton:

In response to a letter dated May 31, 1989 from the U.S. Department of Interior relating to the Crab Orchard National Wildlife Refuge Site ("Site") we have completed and enclosed a Response to the Information Request of the Department of the Interior relating to the Site.

Also enclosed is (a) an Affidavit from William Donahue, an executive of Unidynamics/Phoenix, Inc. and (b) an Affidavit from John Hempler, a former employee.

If you have any questions with regard to this submission I can be contacted at (212) 415-7243.

Sincerely yours,

  
Thomas J. Ungerland

1848C2/2

US EPA RECORDS CENTER REGION 5



423313

Crab Orchard National Wildlife Refuge Site

Response to First Set of Information Requests

1. The contact persons for the Respondent are;

W.C. Donahue  
Director - Human Resources  
Unidynamics - Phoenix, Inc.  
P.O. Box 46100  
Goodyear, Arizona 85063-6100  
(602) 932-8100

T.J. Ungerland, Esq.  
Associate General Counsel  
Crane Co.  
757 Third Avenue  
New York, New York 10017  
(212) 415-7243

2. In addition to the individuals named in Response to Request No. 1 the following were consulted in preparation of this document:

John Hempler  
6201 West Elm Street  
Phoenix, Arizona 85033  
(602) 846-0780  
Plant Engineering Manager 12/88 -retired

John Fronabarger  
225 West Wingedfoot Road  
Phoenix, Arizona 85023  
(602) 942-4298  
Staff Scientist - present

Charles Rittenhouse  
7629 West Devonshire Ave.  
Phoenix, Arizona 85033  
(602) 849-4246  
Staff Chemist - present

Robert Smith  
8114 West Amelia  
Phoenix, Arizona 85033  
(602) 849-2158  
Staff Scientist - present

Edward Lampa  
14 Wilderness Trail  
Williams, Arizona 86046  
(602) 625-2568  
Engineering Administrative Manager - retired

Fredrick Schumacher  
4450 North 61st Avenue  
Phoenix, Arizona 85033  
(602) 846-5653  
Production Manager

3. Respondent gave up its plant site in the Crab Orchard area in 1963 and none of the records from that site have been retained. Therefore no records can be identified in response to Request No. 3.

4. During the period 1952 to 1963 Universal Match Corporation, a Delaware Corporation ("UMC") organized in 1937, leased a plant site in the Crab Orchard area for manufacturing of mechanical components for the U.S. Government. In 1970 Unidynamics/Phoenix Inc., a Delaware corporation with its principal office at 1000 North Litchfield, Goodyear, Arizona 85338-0012, (602) 932-8100 was created to continue the business of manufacturing mechanical components for the government formerly carried on by UMC. In 1984 UMC changed its name to Unidynamics Corporation which continued as the owner of 100% of the stock of Unidynamics/Phoenix Inc. For the purpose of this Response Unidynamics/Phoenix Inc. and Unidynamics Corporation are known as the Respondent. Unidynamics Corporation is a 100% owned subsidiary of Crane Co., a Delaware Corporation. The address and phone number of both of the latter corporations

is 757 Third Avenue, New York, New York 10017 (212) 415-7300.

5. In general the Respondent manufactured mechanical components for agencies of the U.S. government including the military branches and private industries. A more detailed description of the business can be found in an Affidavit dated September 13 1989 from John Hempler, ("Hempler Affidavit") a copy of which is attached as Schedule 1.

6a. SIC Code - No. 3769

6b. The Respondent employed approximately 200 to 250 employees in the early 1960's.

7. No documents are available relating to the real estate formerly occupied by Respondent.

8. The materials purchased, received, processed, ordered, etc. are described in the Hempler Affidavit.

9. The Respondent believes the U.S. Government, Olin Matheson Corporation and CTI Corporation were the other owners or lessees of the facility at Crab Orchard when it was known as the Illinois Ordnance Plant.

10a. For information on purchase, generation, storage, etc. of hazardous substances see the Hempler Affidavit and the list of chemicals accompanying it.

10b. It is believed that the U.S. Government was the previous owner or leasee of the facility leased by respondent and CTI Corporation and Olin Matheson were subsequent owners or leasees .

11. See the Hempler Affidavit

12. See the Hempler Affidavit

13. See the Hempler Affidavit

14. See the Hempler Affidavit

15. Respondent does not have any knowledge concerning materials transported to any site away from the plant location.

16. Respondent does not have any knowledge concerning material transported away from its plant location.

17. No documents are available.

18. Respondent does not have any knowledge of any employee who may have selected locations for shipments off site.

19. Respondent does not have any knowledge relating to material transported to any sites away from the Respondents plant location.

20. No documents are available in Response to Request No. 19 above.

21. Respondent does not have any knowledge with respect to persons with knowledge of documents responsive to Request No. 19 above.

22. Respondent has no knowledge of having accepted materials for transportation to any site from any other person.

23. Respondent is not aware of any documents containing information responsive to the Request No. 22

24. Respondent is not aware of any persons with knowledge, information or documents responsive to question No. 22.

25. Respondent has no knowledge of having accepted any materials from any persons for disposal at a site at the Refuge.

26. Respondent is not aware of any documents containing information responsive to Request No. 25.

27. Respondent is not aware of any persons with knowledge, information or documents responsive to Request No. 25.

28. Respondent believes that it is not liable for any environmental damage which is alleged to have occurred at the Refuge for the reasons described in subparagraph (3) of 42 USC 9607.

29. The U.S. Department of Defense and the U.S. Department of Energy were customers of the Respondent for materials manufactured at Respondent's plant site location in the Crab Orchard area.

30. Respondent did not use or produce PCBs during the period 1952 to 1963 when it occupied the plant

site in the Crab Orchard area.

31. See the list of chemicals attached to the Hempler Affidavit which include a number of lead or lead compounds used by Respondent. The Respondent does not have any knowledge or documents relating to the disposal of lead or lead compound at any site on the Refuge.

32. Respondent does not have any knowledge relating to any leaks, spills or other releases at its plant site or any site on the Refuge.

33. Except for a minor "photo-flash" explosion/fire within the Respondent's building in the mid -1950's, Respondent does not have any knowledge relating to explosions, fire, leaks, spills or other similar events anywhere else on the Refuge.

34a. Income Tax Returns (federal and state) including financial statements for the Respondent for the past two fiscal years are attached as Schedule 2.

b. The current assets and liabilities of the Respondent are stated in the Income Tax Returns (Schedule 2) which are supplied in response to Request 34a.

c. A complete registry of insurance policies of the Respondent including a full description of those policies is attached as Schedule 3.

35. Respondent has not filed for bankruptcy.

36. Except as listed in response to Request No. 1 and No. 2 above, Respondent does not have any

knowledge of any persons that may be able to provide more detailed information or give a more complete response to any Information Request or that may be able to provide additional documents or identify any other persons relating to the Information Request.

1859C



**SCHEDULES ATTACHED TO U/D PHOENIX FILING**

- Schedule 1.        Hempler Affidavit dated  
                     September 13, 1989**
- Schedule 2.        Income Tax Returns (abbreviated)  
                     including financial statements.**
- Schedule 3.        Registry of Insurance Policies  
                     of Respondent**
- Schedule 4.        Affidavit of W. Donahue as required  
                     by Instruction No. 9 of the  
                     Information Request**


**1859C**

CRAB ORCHARD - WILLIAMSON COUNTY, ILLINOIS

**AFFIDAVIT**

John R. Hempler, being duly sworn deposes and says:

1. That I reside at 6201 West Elm Street, Phoenix, Arizona.
2. That for a period of approximately 35 years I was employed by Unidynamics/Phoenix and its predecessor, Universal Match Corporation which changed its name to Unidynamics Corporation in 1983 (the "Company") as a Model Shop and Maintenance Manager. I retired from the Company in December 1988.
3. This Affidavit is executed at the request of Bill Donahue of Unidynamics/Phoenix, Inc. in response to an Information Request from the U.S. Department of Interior relating to the Crab Orchard Wildlife Refuge Site ("Crab Orchard Site").
4. My recollections regarding the plant (and its operations) leased by Universal Match Corporation near the Crab Orchard Site are vague because the Company terminated its lease and left the site more than 25 years ago.
5. Attached as Exhibit 1 to this Affidavit is a Statement dated August 29, 1989 by me to management of Unidynamics/Phoenix of my recollections regarding the plant maintained by the Company.
6. Also attached is a list of chemicals which I believe were used at the plant site leased by the Company during the period in question.
7. To the best of my knowledge the information contained in the attached Statement and in the list of chemicals is true and correct.

  
John R. Hempler

Sworn to before me  
this 13 day of September, 1989

  
Mary Ann Wellman  
Notary Public

My Commission Expires March 31, 1993

EXHIBIT 1 TO HEMPLER AFFIDAVIT

August 29, 1989

Mr. Bill Donahue  
Director of Human Resources  
Unidynamics, Phoenix  
P.O. Box 64100  
Phoenix, Arizona 85063-6100

Re: Crab Orchard Environmental Impact Study.

Dear Bill:

The time restraints imposed upon this discussion will limit it to little more than a summary as to what operations were done at Crab Orchard, where the operations were performed, and the approximate time frame of the operations.

The dates are approximate, to the best of my memory, as well as the items and location. I am not aware of any existing records to confirm these facts; however, if they were available, I believe they would approximate the following.

Universal Match Corporation leased the "B" area for Engineering and Development, The "F" area for warehouse storage, the "D" area for administration and manufacturing, the "B"-2 and the "B"-13 Igloo areas for storage, and the old Diagraph Bradley area for the M-112 and M-123 photoflash testing. My discussion will center around the "D" area which was the area where most of the waste was generated from manufacturing.

The "D" area consisted of approximately 37 acres entirely enclosed with a 8 foot high chain link fence. There were no trees inside the chain link fence area, and the area was mowed on a regular schedule.

There were 16 buildings in the area, all of which were used at various times but not consistently. There were two steam generating stations, one at the north east corner and one at the south west corner of the campus. These generating stations were never used by Universal Match Corporation.

Throughout the discussion please refer to the rough sketch attached for building locations and reference. The sketch is not to scale.

#### DISCUSSION

The Hi-Burst signal was manufactured approximately from 1953 to 1954. It was assembled in building D-1-6. The delay fuze was loaded in the Ferguson plant and shipped to Crab Orchard. The bursting charge was approximately 3 ounces of

smokeless powder. The average production rate was 1200 units per shift.

The T-73 Parachute Flare was manufactured approximately from 1953 to 1954. The black powder rocket motor was blended and pressed in building D-1-4. The illumination candle was purchased from an outside source, and the unit was assembled in building D-1-6. The production was approximately 100 units per. shift.

The Navy Float Signal was manufactured approximately from 1954 to 1957. The red phosphorous candle was mixed and pressed in building D-1-11. The candle composition was red phosphorous, linseed oil, iron oxide, and manganese powder. The candles were cured approximately 5 days in building D-1-10 and D-1-12. The pellets were approximately 1 1/4" in diameter and 4" in length. They weighed approximately 150 grams. There were 4 pellets per candle and 4 candles in each Float Signal. The candle was ignited by a mixture of 666 ignition powder. Refer to PPR for 666 ignition powder composition. The ignition powder was contained in a plastic cup and cover assembly at the end of a length of Ensign Bickford fuze. The fuze was ignited by a pull type fire starter igniter assembly which was a purchased item. The pellet, the ignition cup and the Ensign Bickford fuse were all encased in a lead tube approximately 17" long. There were 4 lead tubes (candle assemblies) in each wooden float signal. The assembly of the float signal was done in building D-1-8, bays H and J. The production rate was approximately 50 per shift.

The Navy Practice Bomb was manufactured approximately from 1954 to 1956. They were assembled in building D-1-8, in bay F. The unit was an aluminum 10 gage shotgun shell approximately 7" long. In one end was a percussion primer and an expelling charge of smokeless powder. On top of this was a series of gun wads and paper discs. Next came a charge of red phosphorous powder or zinc oxide, depending upon the type of practice bomb we were making. On top of the marking charge came more wadding and disc sealed in place with Pittman cement and a metal closure cup sealed with a varnish sealer. The production rate was an average of 4500 units per shift.

The M-112 and the M123 Photoflash shells were manufactured approximately 1954 through 1957. The powder was blended in bldg D-1-26 and the inner shell case was loaded in D-1-27. The photoflash charge was a dry Patterson Kelley blend of atomized aluminum powder, potassium perchlorate and barium nitrate. After the second explosion of the loading operation in building D-1-27, both the blending and the loading operations were relocated to building D-1-5 where the contract was completed in 1957. The final assembly of the round was done in building D-1-6, bay H and the

packaging was done in bay J. The production rate for the M-112 was approximately 800 rounds per shift and the M-123 was 500 rounds per shift. The two items, although similar, did not run simultaneously.

The Fuel Tube Rod program began in approximately 1956 and was completed in 1956 or 1957. The program did not run as long as most of our other programs. We received the uranium pellets from Mallencroft, cut them to the proper length, inserted them into the aluminum tubing, pulled a vacuum on the assembly, welded both ends and then trimmed both weld joints to a specified diameter after which we performed a helium leak test. All the operations for the fuel tube rod program were performed in building D-1-13. There was no waste of contaminated material here because we were required to account for and return all unused fuel materials to Mallencroft including the waste water used to catch the cuttings from the fuel rods. Records were maintained to confirm the accountability of materials and the records were scrutinized by the Atomic Energy Commission. All materials were accounted for.

Minuteman, Skirt Removal Program was started in Research and Development approximately in 1958. It came to production approximately 1961 or 1962 and continued until we moved to Phoenix. The Minuteman program consisted of various length of linear cord, "H" booster, various delays, detonators, and a safe and arm mechanism. All powders for the Minuteman program can be found in the PPR used today. This is still an active contract. At Crab Orchard all powders were prepared by Research and Development in the "B" area. The units were assembled in building D-1-6 and D-1-7. Packaging and Kitting was done in building D-1-7. I am not familiar with the number of kits shipped each month from the Crab Orchard facilities. Perhaps Louis Peterson or Jet Turner can supply this information.

The MC-748 Actuator and the MC-749 Switch began approximately 1957 and continued until the closing of the Crab Orchard facilities. The MC-748 actuator contained normal lead styphnate on the bridge and ball powder was used for the propellant. The MC-749 switch was inert. See current PPR for processing procedures for the styphnate and the ball powder. These procedures were performed in the "B" area by R&D chemists.

The MC 935 Actuator and the MC 936 Switch began approximately 1958 and continued at Crab Orchard until we moved the plant in 1963. The MC-935 Actuator had normal lead styphnate on the bridge, but I don't remember what the propellant charge was. See PPR for processing of powders. The MC-936 Switch was inert. All powders were processed in the "B" area by the R&D chemist. Both the MC-935 and the MC-936 were loaded and assembled in building D-1-8. I have

no recollection as to the quantity shipped each month. I would estimate the number to be approximately 1200 at the peak months at Crab Orchard.

The MC-835, 875, and 1156 family of Delay Switches were manufactured approximately in the years from 1959 through 1963 when we moved the plant to Phoenix. The formulation for the delay switches can be found in the PPR as these powders are still formulated for other applications. The process cards may still be available from drawing and document control. See Joe Ruso. While at Crab Orchard, the delay powders were processed in the "B" area by the R&D chemist. The delay columns were loaded and the switches were assembled in bays A, B, AND C OF building D-1-8. Packaging was done in bays C & D. The production rate was low very similar to the MC-749, and the MC-936. I would estimate less than 200 units per day when the schedule required their shipment.

The MC-1061 Actuator started about 1959 and continued to run through 1963 when we moved the plant to Phoenix. The unit contained normal lead styphnate on the bridge wire, and I don't remember what was used as the propellant charge. We had a similar unit in production here at Phoenix. I'm sure Dave Foltz could tell you what that unit is and what the PPR for that unit is. Dave may remember what the propellant charge in the MC 1061 was. Ask him. The production rate for the MC-1061 at Crab Orchard was less than 1200 per month at maximum schedule.

The MC-1362 Gas Generator started in R&D in approximately 1960. Bill Millsbaugh was the R&D development engineer in the design phase of the program, and I am sure he could give more accurate dates than I can. The program moved from R&D to production sometime about 1961 or 1962. The igniter has normal lead styphnate on the bridge wire (and a boron booster pellet mixed with other powders to form a booster charge. The booster charge was contained in a cup crimped to the header assembly. The main propellant was IMR rifle powder approximately 120 grams. Again the process cards and PPRs can be found in drawing document control. Contact Joe Ruso. All powders were processed by R&D chemist in the "B" area.

The waste from buildings D-1-4, 6, 7, 8, 11, 26, and 27 was collected under water, taken to a burning pad south of building D-1-11 and spread over cardboard boxes and excelsior to dry. Once dry it was ignited and burned.

There was a second burning pad in the "D" area used for selected burning. Non-contaminated items containing pyrotechnic, primary and/or secondary explosives items that could be destroyed in the dry form such as linear cord, fuzes, detonators ect. were destroyed at pad 1 south west of building D-1-5. This pad had limited use since the materials destroyed in the dry form was very limited. This was done primarily during the years of 1953 through 1957 while we were predominately in ordinance assembly work. After 1957 the nature of our work changed from small ordinance work to AEC work, and the explosive/hazardous waste diminished to practically nothing. Keep in mind, I am writing about the manufacturing group and this does not include the R&D operations. What was happening in R&D at that time I was only vaguely familiar with.

The solvents used at Crab Orchard facilities were similar to the ones used today at our Phoenix plant. The more commonly used solvents were Acetone, TCE, MEK, IPA, and Toluene. The quantities we used at Crab Orchard were considerably less than we used at Phoenix because we were degreasing smaller items and fewer quantity. I can not recall what we did with the solvent waste. If we had a procedure for collection and disposing of solvents, I am not aware of it. At that time we probably used part of the waste solvents to clean equipment in the maintenance shops and the machine shops. I would imagine part of it was taken home by the employees to clean driveways and automobiles. I checked with John McGuire, and he doesn't remember what we did with solvent waste.

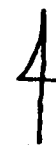
I hope this information will be of some help to you in answering EPA questions. Again let me say, all this information is from memory and most of it goes back 30 years. During the writing I talked to Ed Lampl, Fred Schumacher and John McGuire several times to confirm what I could remember about Crab Orchard and its operations. If I can be of any further help please call me at 846-0780.

Very Truly Yours

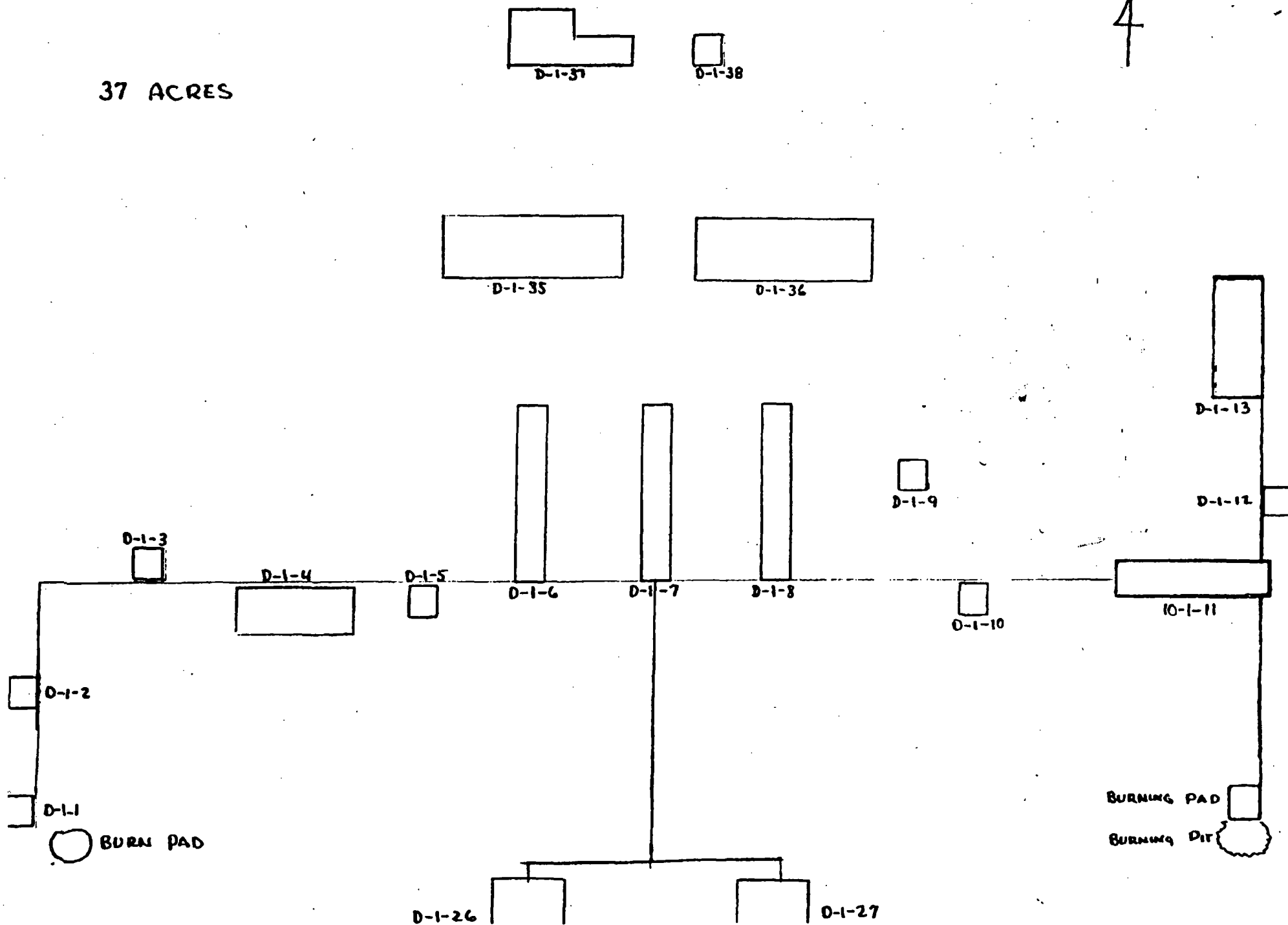
John R. Hempler

"D" AREA CRAB ORCHARD PLANT

NORTH



37 ACRES





9) The listed chemicals and explosives are those that were prepared and/or used by the Engineering and Chemicals R&D groups at the Crab Orchard facility. To our knowledge (and memory) none of these materials were shipped to outside points and the R&D groups did not handle any of the disposal tasks. The chemicals and explosives not prepared at Crab Orchard were received from outside vendors.

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## CHEMICALS AT CRAB ORCHARD

1. Boron
2. Calcium Chromate
3. Barium Chromate
4. Lead Chromate
5. Zirconium
6. Titanium
7. Magnesium
8. Silicon
9. Cupric Oxide
10. Cuprous Oxide
11. Potassium Perchlorate
12. Lead Nitrate
13. Lead Tetroxide
14. Teflon
15. Anthracene
16. Fluorel
17. BI-770
18. Lead Styphnate
19. Lead Azide
20. Lead Mononitro Resorcinat
21. KHND
22. NaHND
23. Barium Styphnate
24. TNT
25. RDX
26. HMX
27. HNS
28. PbHNO
29. Nitrocellulose
30. Coordination Compounds (See Attached)
31. Phosphorus (red and yellow)
32. Molybdenum
33. Chromium
34. N5 Propellant

35. 1825 Propellant
36. Aluminum
37. Sodium Hydroxide
38. Potassium Hydroxide
39. Sulfamic Acid
40. Hydrochloric Acid
41. Acetic Acid
42. Acetone Acid
43. MEK

1. Aminotetrazole
2. Disilver Aminotetrazole Perchlorate
3. Silver Acetylde
4. Thallous Azide
5. Guanidine Nitrate
6. Guanidine Picrate
7. Nitroguanidine
8. Various Smoke Dyes
9. Ammonium Nitrate
10. Ammonium Perchlorate
11. Dibutylphthalate
12. PVC Resin
13. PBAA Resin
14. Various Urethane Resins
15. Various Epoxy Resins
16. Boron/Potassium Nitrate
17. Black Powder
18. Smokeless Powders
19. Tetramethylammonium Perchlorate

1. Hexamminecobalt (III) nitrate
2. Nitratopentamminecobalt (III) nitrate
3. Trinitrotriamminecobalt (III)
4. Cis and trans dichlorobis (ethylenediamine) cobalt (III) perchlorate
5. Hexamminecobalt (III) iodate hemihydrate
6. Isothiocyanatopentamminecobalt (III) perchlorate (ICCP)
7. Silver oxalate
8. Mercuric Oxalate
9. Di-isothiocyanatotetramminecobalt (III) perchlorate
10. Ammonium hexanitrocobaltate
11. KDNBF
12. KTNC
13. Thallium 2, 4-dinitrophenoxide
14. Trisethylenediaminecobalt (III) iodate
15. Bisethylenediaminezinc (II) iodate
16. Bis (1, 3-propanediamine) copper (II) iodate
17. Bisethylenediaminecopper (II) iodate
18. Bisethylenediamine mercury (II) iodate
19. Ammonium 2, 4-dinitrophenoxide
20. Aniline perchlorate
21. Hexamminecobalt (III) periodate
22. Approximately 35 coordination compounds in lesser quantities
23. 15-20 polynitroaromatics (sm. quantities)
24. Approximately 15 amine salts and high nitrogen compounds (sm. quantities)
25. Diethylether
26. Ethyl Alcohol
27. Nitric Acid
28. Ammonium Hydroxide
29. Methyl Alcohol
30. Benzene
31. Toluene

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY CO.

Policy Period: Unknown - 1/1/52

Policy Number: OGL 361760

Policy Type: Comprehensive General Liability

Limits of Liability: Unknown

Broker: Unknown

Source: Letter dated 2/25/53 from Department of the Navy to  
Universal Match Corporation listing policies.

Named Insured: Universal Match Corporation

General Comments: Original policy is missing. No further policy details  
available at this time.

UNIDYNAMICS

Register of Primary Liability Policies

<u>Carrier:</u>	Unknown
<u>Policy Period:</u>	1953
<u>Policy Number:</u>	OGL 361889
<u>Policy Type:</u>	Comprehensive General Liability
<u>Limits of Liability:</u>	Unknown
<u>Broker:</u>	Unknown
<u>Source:</u>	Correspondence between Universal Match Corporation and Department of the Navy obtained from the Naval Archives.
<u>Named Insured:</u>	Universal Match Corporation
<u>Coverage:</u>	Unknown
<u>General Comments:</u>	Original policy is missing. No further policy details available at this time.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY CO.

Policy Period: Unknown - 1/1/55

Policy Number: OGL 361949

Policy Type: Comprehensive General Liability

Limits of Liability: Unknown

Broker: Unknown

Source: Declarations page of renewal policy no. OGL 365179,  
United States Casualty Company (1/1/55 - 1/1/56).  
  
Letter dated 1/20/55 from Department of the Navy to  
Universal Match Corp. listing policies; letter dated  
4/2/54 from Joseph MacNaughton, Universal Match Corp.,  
to C. Keely Fox, Department of the Navy.

Named Insured: Universal Match Corporation, Ferguson Machine & Tool  
Co., Masterbuilt Products Corp., and Unitronics, Inc.

General Comments: Original policy is missing. No further policy details  
available at this time.



UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY CO.

Policy Period: 1954

Policy Number: Unknown

Policy Type: Products

Limits of Liability: Unknown

Broker: Unknown

Source: Cable correspondence dated 7/12/54 - 4/26/55 between Price, Forbes and Lukis Stewart and Co. relating to Lloyd's policy no. K26079

Named Insured: Universal Match Corporation

Coverage:

General Comments: Original policy is missing.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY CO.

Policy Period: 1/1/55 - 1/1/56

Policy Number: OGL 365179

Policy Type: Comprehensive General Liability

Limits of Liability: Bodily Injury  
\$100,000 per person  
\$300,000 per occurrence  
Property Damage  
\$50,000 per accident  
\$100,000 aggregate operations  
\$100,000 aggregate protective

Broker: Weissenborn & Reynolds, St. Louis, MO

Source: Copy of original policy and thirty day binder obtained from Naval Archives.

Named Insured: Universal Match Corporation

Coverage: Coverage for bodily injury is provided on an occurrence basis.  
  
Coverage for property damage is provided on an accident basis.

Definitions: Occurrence - "An event, or continuous or repeated exposure to conditions, which unexpectedly causes injury during the policy period. All such exposure to substantially the same general conditions existing at or emanating from each premises location shall be deemed one occurrence."

General Comments:

Policy does not contain a pollution exclusion.

Occurrence coverage for bodily injury added by endorsement.

Policy contains a products exclusion.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY COMPANY

Policy Period: 1955

Policy Number: Unknown

Policy Type: Products Liability

Limits of Liability: Bodily Injury  
\$50,000 any one person  
\$50,000 any one occurrence  
\$100,000 aggregate

Property Damage  
\$50,000 any one accident  
\$100,000 aggregate

Broker: Unknown

Source: Schedule attached to Lloyd's slip no. K31089

Named Insured: Universal Match Corporation

Coverage:

General Comments: Original policy is missing.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY COMPANY

Policy Period: 1/1/56 - 1/1/57

Policy Number: OGL 809460

Policy Type: Comprehensive General Liability

Limits of Liability: Bodily Injury  
\$100,000 each person  
\$300,000 each occurrence  
not covered aggregate products

Property Damage  
\$50,000 each accident  
\$100,000 aggregate operations  
\$100,000 aggregate protective  
not covered aggregate products  
\$100,000 aggregate contractual

Broker: Weissenborn & Reynolds, St. Louis, MO

Source: Copy of policy, thirty day binder, and letter dated 12/13/56 from Department of Navy to Universal Match Corp. listing policies.

Named Insured: Universal Match Corporation; Fergusen Machine and Tool Co.; Masterbuilt Products Corp.; Unitronics, Inc.; and International Tag and Salesbook Company.

Coverage: Coverage for bodily injury is provided on an occurrence basis.

Coverage for property damage is provided on an accident basis.

Definitions:

Occurrence - "An event, or continuous or repeated exposure to conditions, which unexpectedly causes injury during the policy period. All such exposure to substantially the same general conditions existing at or emanating from each premises location shall be deemed one occurrence."

General Comments:

Policy does not contain a pollution exclusion.

Occurrence coverage for bodily injury added by endorsement.

Policy contains a products exclusion.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY COMPANY

Policy Period: 4/14/56 - 4/14/57

Policy Number: Unknown

Policy Type: Products Liability

Limits of Liability: Bodily Injury  
\$50,000 any one person  
\$50,000 any one occurrence  
\$100,000 aggregate

Property Damage  
\$50,000 any one accident  
\$100,000 aggregate

Broker: Unknown

Source: Schedule of underlying insurance attached to Lloyd's slip no. CK 1157

Letter dated 3/19/56 from Weissenborn & Reynolds to Lukis Stewart and Co.

Letter dated 3/22/56 from Lukis Stewart and Co. to Price, Forbes

Named Insured: Universal Match Corporation

Coverage:

General Comments: Original policy is missing.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY COMPANY

Policy Period: 1/1/57 - 1/1/58

Policy Number: OGL 810447

Policy Type: Comprehensive General Liability

Limits of Liability: Bodily Injury  
\$100,000 each person  
\$300,000 each occurrence

Property Damage  
\$50,000 each accident  
\$100,000 aggregate operations  
\$100,000 aggregate protective  
\$100,000 aggregate contractual

Broker: Weissenborn & Reynolds, St. Louis, MO

Source: Copy of policy and documents obtained from Naval Archives.

Named Insured: "This policy is extended to cover the following companies which are owned or financially controlled by the Universal Match Corporation.  
1. Universal Match Corporation  
2. Ferguson Machine Corporation  
3. Impax, Incorporated  
4. Unitronics, Incorporated  
5. International Tag and Salesbook Company  
6. National Vendors, Incorporated  
7. Universal Service, Incorporated  
8. Metfab, Incorporated  
9. N.I.V. Vendors Incorporated  
10. Plate Craft, Incorporated  
11. Universal Properties, Incorporated  
It is further agreed that this policy is extended to cover any company of which the named insured acquires



ownership or financial control, provided that the company is notified within 30 days of such acquisition."

Coverage:

Coverage for bodily injury is provided on an occurrence basis.

Coverage for property damage is provided on an accident basis.

Definitions:

Occurrence - "An event, or continuous or repeated exposure to conditions, which unexpectedly causes injury during the policy period. All such exposure to substantially the same general conditions existing at or emanating from each premises location shall be deemed one occurrence."

General Comments:

Policy does not contain a pollution exclusion.

Occurrence coverage for bodily injury added by endorsement.

Policy contains a products exclusion.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY COMPANY

Policy Period: 1/1/58 - 1/1/59

Policy Number: OGL 812527

Policy Type: Comprehensive General Liability

Limits of Liability: Bodily Injury  
\$100,000 each person  
\$300,000 each occurrence

Property Damage  
\$50,000 each accident  
\$100,000 aggregate operations  
\$100,000 aggregate protective  
\$100,000 aggregate contractual

Broker: Weissenborn & Reynolds, St. Louis, MO

Source: Copy of policy obtained from Naval Archives.

Named Insured: "This policy is extended to cover the following companies which are owned or financially controlled by the Universal Match Corporation.

1. Universal Match Corporation
2. Ferguson Machine Corporation
3. Impax, Incorporated
4. Unitronics, Incorporated
5. International Tag and Salesbook Company
6. National Vendors, Incorporated
7. Universal Service, Incorporated
8. Metfab, Incorporated
9. N.I.V. Vendors Incorporated
10. Plate Craft, Incorporated
11. Universal Properties, Incorporated

It is further agreed that this policy is extended to cover any company of which the named insured acquires

ownership or financial control, provided that the company is notified within 30 days of such acquisition."

Coverage:

Coverage for bodily injury is provided on an occurrence basis.

Coverage for property damage is provided on an accident basis.

Definitions:

Occurrence - "An event, or continuous or repeated exposure to conditions, which unexpectedly causes injury during the policy period. All such exposure to substantially the same general conditions existing at or emanating from each premises location shall be deemed one occurrence."

General Comments:

Policy does not contain a pollution exclusion.

Occurrence coverage for bodily injury added by endorsement.

Defense costs provided in addition to policy limits. Policy language does not restrict coverage for defense costs after the exhaustion of policy limits.

Policy contains a products exclusion.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY COMPANY

Policy Period: 1/1/59 - 1/1/60

Policy Number: CGL 812591

Policy Type: Comprehensive General Liability

Limits of Liability: Bodily Injury  
\$100,000 each person  
\$300,000 each occurrence

Property Damage  
\$50,000 each accident  
\$100,000 aggregate operations  
\$100,000 aggregate protective  
\$100,000 aggregate contractual

Broker: Weissenborn & Reynolds, St. Louis, MO

Source: Copy of policy and documents obtained from Naval Archives.

Named Insured: "This policy is extended to cover the following companies which are owned or financially controlled by the Universal Match Corporation.

1. National Rejectors, Incorporated
2. Universal Match Corporation
3. Fergusen Machine Corporation of Indiana
4. Impax, Incorporated
5. Unitronics, Incorporated
6. International Tag and Salesbook Company
7. National Vendors, Incorporated
8. Universal Services, Incorporated
9. Metfab, Incorporated
10. Plate Craft, Incorporated
11. Universal Properties, Incorporated
12. Tool Manufacturing Company

It is further agreed that this policy is extended to cover any company of which the named insured acquires ownership or financial control, provided that the company is notified within 30 days for such acquisition."

Coverage:

Coverage for bodily injury is provided on an occurrence basis.

Coverage for property damage is provided on an accident basis.

Definitions:

Occurrence - "An event, or continuous or repeated exposure to conditions, which unexpectedly causes injury during the policy period. All such exposure to substantially the same general conditions existing at or emanating from each premises location shall be deemed one occurrence."

General Comments:

Policy does not contain a pollution exclusion.

Occurrence coverage for bodily injury added by endorsement.

Defense costs provided in addition to policy limits. Policy language does not restrict coverage for defense costs after the exhaustion of policy limits.

Policy contains a products exclusion.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY COMPANY

Policy Period: 1/1/60 - 1/1/61

Policy Number: OGL 820304

Policy Type: Comprehensive General Liability

Limits of Liability:

Bodily Injury  
\$100,000 each person  
\$300,000 each occurrence  
\$300,000 aggregate products

Property Damage  
\$50,000 each accident  
\$100,000 aggregate operations  
\$100,000 aggregate protective  
\$100,000 aggregate products  
\$100,000 aggregate contractual

Broker: Weissenborn & Reynolds, St. Louis, MO

Source: Copy of policy obtained from Naval Archives.

Named Insured:

"This policy is extended to cover the following companies which are owned or financially controlled by the Universal Match Corporation.

1. Universal Match Corporation
2. S.G. Adams Company
3. Custo Made Products Corporation
4. American Air Curtain Corporation
5. A.A.C. Holding Corporation
6. Ferguson Machine Corporation
7. National Rejectors, Inc.
8. National Vendors, Inc.
9. Metfab, Inc.
10. Plate Craft, Inc.
11. Universal Service, Inc.
12. Tool Manufacturing Company

13. Universal Cabinet Corporation
14. Universal Properties, Inc.
15. Simmons-Sister Company, Incorporated
16. Simmons-Woodward, Incorporated
17. Woodward & Tiernan Printing Company
18. Wrought Iron Range Company
19. Universal Metal Products Corporation

It is further agreed that this policy is extended to cover any company of which the named insured acquires ownership or financial control, provided that the company is notified within 30 days of such acquisition."

Coverage:

Coverage for bodily injury is provided on an occurrence basis.

Coverage for property damage is provided on an accident basis.

Definitions:

Occurrence - "An event, or continuous or repeated exposure to conditions, which unexpectedly causes injury during the policy period. All such exposure to substantially the same general conditions existing at or emanating from each premises location shall be deemed one occurrence."

General Comments:

Policy does not contain a pollution exclusion.

Occurrence coverage for bodily injury added by endorsement.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: UNITED STATES CASUALTY COMPANY

Policy Period: 1/1/61 - 1/1/62

Policy Number: OGL 820917

Policy Type: Comprehensive General Liability

Limits of Liability:

Bodily Injury:  
\$100,00 each person  
\$300,000 each occurrence  
\$300,000 aggregate products

Property Damage:  
\$50,000 each accident  
\$100,000 aggregate operations  
\$100,000 aggregate protective  
\$100,000 aggregate products  
\$100,000 aggregate contractual

Broker: Weissenborn & Reynolds, St. Louis, MO

Source: Original policy.

Named Insured: Universal Match Corporation, Universal Properties, Incorporated, Customade Products Corporation, American Air Curtain Corporation, A.A.C. Holding Corporation, Ferguson Machine Corporation of Indiana, National Rejectors, Incorporated, National Vendors, Incorporated, Metfab Incorporated, Platecraft Incorporated, Universal Service Incorporated, Tool Manufacturing Company, Unimatic Merchandisers Incorporated, Simmons-Woodward, Incorporated, Sleight and Helmuth Company, Universal Metal Products Corporation, S.P.G. Adams Company, Universal Cabinet Division, Glasgow Corporation, Reflectone Electronics Incorporated, Hermatite Corporation, Whittenborg, Incorporated, "any company of which the names insured acquires ownership or financial control, provided that the company is notified within thirty (30) days of such acquisition.



Coverage:

Coverage for bodily injury is provided on an "occurrence" basis. Coverage for property damage is on an "accident" basis.

Definition of Occurrence:

"An event, or continuous or repeated exposure to conditions, which unexpectedly causes injury during the policy period. All such exposure to substantially the same general conditions existing at or emanating from each premises location shall be deemed one occurrence."

General Comments:

Policy does not contain a pollution exclusion.

"Occurrence" coverage for bodily injury added by endorsement.

Defense costs provided in addition to policy limits. Policy language does not restrict coverage for defense costs after the exhaustion of policy limits.

Aggregate limit for bodily injury claims applies only to products liability. Other claims, i.e. operations/premises, are not subject to an aggregate limit.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: INSURANCE COMPANY OF NORTH AMERICA

Policy Period: 1/1/62 - 1/1/64

Policy Number: LB 28040

Policy Type: Blanket Liability

Limits of Liability:  
Bodily Injury:  
\$100,000 each person  
\$300,000 each occurrence  
\$300,000 aggregate products

Property Damage:  
\$50,000 each occurrence  
\$100,000 aggregate

Deductible:  
Bodily Injury: \$500 per claim  
Property Damage: \$500 per claim

Note: This deductible applies to products liability claims involving matches only.

Broker: National Underwriters Incorporated, St. Louis, MO

Source: Original policy and related correspondence.

Named Insured: Universal Match Corporation, Higgins-McGee Printing Inc. and Chemical Corporation, Higgins-McGee Printing Inc. Sale Corporation, Higgins-McGee Printing Inc. of Southern California, Universal Match Corporation-Match Division, Universal Match Corporation-Arament Division, American Air Curtain Corporation, Custom Made Products Corporation, Ferguson Machine Corporation of Indiana, National Rejectors Incorporated, National Vendors Incorporated, Simmons-Woodward, Incorporated, Sleight and and Helmuth Company, Universal Metal Products Corporation, Universal Cabinet Division of Universal Metal Products Corporation, U.M. Acceptance Corporation, Whitenborg Incorporated, Reflectone Electronics Incorporated, Glasgow Corporation, Hermite Division.

Definition  
of Named  
Insured:

"The words 'named insured', wherever used in this policy, shall include any subsidiary company of the named insured and any other company which comes under the named insured's control and of which it assumes active management."

Coverage:

Coverage for bodily injury provided for all legal liability subject to the terms of the policy. (Note: Coverage is broader than "occurrence.")

Coverage for property damage is provided on an "occurrence" basis.

Definition of  
Occurrence:

"With respect to Coverage B, "occurrence" means either an accident happening during the policy period or a continuous or repeated exposure to conditions which unexpectedly and unintentionally cause injury to or destruction or property during the policy period. All damages arising out of such exposure to substantially the same general conditions shall be considered as arising out of one occurrence."

General  
Comments:

Policy does not contain a pollution exclusion.

Defense costs provided in addition to policy limits. Policy language does not restrict coverage for defense costs after the exhaustion of policy limits.

Aggregate limit for bodily injury claims applies only to products liability. Other claims, i.e. operations/premises, are not subject to an aggregate limit.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: CONTINENTAL CASUALTY COMPANY (CNA)

Policy Period: 1/1/64 - 1/1/67

Policy Number: CL-4297600

Policy Type: Comprehensive General Liability ("OGL")

Limits of Liability: \$1,000,000 combined single limit

Broker: Weissenborn & Reynolds, St. Louis, MO

Source: Certificate of Insurance

Various internal memorandum and correspondence with Marsh & McLennan

Engineering report submitted 8/26/65 by CNA regarding a survey at the Arizona location

General Comments: Original policy is missing. Policy terms taken from the Certificate of Insurance.

The Certificate of Insurance indicates that a Severability of Interest Endorsement is attached to the policy affording full limits coverage for each insured.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: CONTINENTAL CASUALTY COMPANY (CNA)

Policy Period: 1/1/67 - 7/1/74

Policy Number: CL 2144600

Policy Type: Comprehensive Liability ("CGL")

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate operations, aggregate protective,  
aggregate products and aggregate contractual

Deductible: Bodily Injury: \$250 per claim  
Property Damage: \$250 per claim

Note: This deductible applies to products liability claims involving matches only.

Broker: Marsh & McLennan, Inc., St. Louis, MO

Source: Original policy

Named Insured: UMC Industries, Inc.; American Air Curtain Division; Ferguson Machine Company Division; Glasco Division; Hermitite Division; Higgins-Magee Printing Company, Inc.; Lennox Manufacturing Company; National Rejectors Inc.; National Vendors; Sleight and Hellmuth Company; UniDynamics, St. Louis Division; UniDynamics, Phoenix Division; Universal Cabinet Division; Universal Properties, Inc.; Unipark Division; National Vendors owned by Navend Industries Ltd.; Universal Metal Products; Unimatchco Merchandiser Division; Winsmith, and any affiliated or subsidiary companies in which the named insureds have a financial control and any trade name under which they now operate or may operate in the future.

Coverage: Coverage is provided on an "occurrence" basis.

Definition of  
Occurrence:

"An event, or continuous or repeated exposure to conditions, which unexpectedly causes bodily injury, sickness or disease, including death at any time resulting therefrom and/or damages because of injury to or destruction of tangible property, including the loss of use thereof during the policy period. All such exposure to substantially the same general conditions existing at or emanating from each premises location shall be deemed one occurrence."

Pollution  
Exclusion:

"It is agreed that the insurance does not apply to bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental."

This exclusion was added to the policy effective January 1, 1971 per endorsement no. 71.

General  
Comments:

Original policy period extended by endorsements nos. 56 and 101A. Final expiration date taken from the General Release for Cancellation effective 7/1/74. Limit of liability found in Condition # 4. Policy does not specify if the aggregate limit applies separately to the operations, protective, products and contractual coverages.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF  
WISCONSIN (WAUSAU)

Policy Period: 7/1/74 - 7/1/75

Policy Number: 0725 02 042240

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate products/completed operations

Deductible: Bodily Injury: \$250 per claim  
Property Damage: \$250 per claim

Note: This deductible applies to products liability claims involving matches only

Broker: Marsh & McLennan, Inc., Stamford, CT

Source: Original policy

Named Insured: UMC Industries, Inc.  
Additional named insured: Universal Match Division,  
Universal Management Services, Ferguson Machine Company  
Division of UMC Industries, Inc., Hermetite Division of  
UMC Industries, Inc., National Rejectors Industries, a  
Division of UMC Industries, Inc., National Vendors, a  
Division of UMC Industries, Inc., Universal/Nolin, a  
Division of UMC Industries, Inc., Winn Smith, a Division  
of UMC Industries, Inc., UMC/Colson Division of UMC  
Industries, Inc., Osborne-Kemper-Thomas, a Division of  
UMC Industries, Inc., Unidynamics/St. Louis, a  
Subsidiary of UMC Industries, Inc., UMC/Electropics, a  
Subsidiary of UMC Industries, Inc.

Note: The additional named insured endorsement states that it does not apply to Hawaii, Louisiana, Missouri, New Jersey or Texas operations.

Coverage:

Coverage is provided on an "occurrence" basis.

Definition of  
Occurrence:

"An accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured. All bodily injury and property damage arising out of continuous or repeated exposure to substantially the same general conditions shall be considered as arising out of one occurrence."

Pollution  
Exclusion:

"To bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental."

Exhaustion  
of Aggregate  
Limits:

"The company shall not be obligated to pay any claim or judgment or defend any suit after the applicable limit of the company's liability has been exhausted by payment of judgment or settlement."



UNIDYNAMICS

Register of Primary Liability Policies

Carrier: EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF  
WISCONSIN (WAUSAU)

Policy Period: 7/1/75 - 7/1/76

Policy Number: 0726 02 042240

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate

Deductible: Bodily Injury: \$250 per claim  
Property Damage: \$250 per claim

Note: This deductible applies to products liability claims involving matches only.

Broker: Marsh & McLennan, Inc., Stamford, CT

Source: Original policy

Named Insured: UMC Industries, Inc.  
Additional named insureds: Universal Match Division,  
Universal Management Services, Ferguson Machine Company  
Division of UMC Industries, Inc., Hermetite Division of  
UMC Industries, Inc., National Rejectors Industries, a  
Division of UMC Industries, Inc., National Vendors, a  
Division of UMC Industries, Inc., Universal/Nolin, a  
Division of UMC Industries, Inc., Winn Smith, a Division  
of UMC Industries, Inc., UMC/Colson Division of UMC  
Industries, Inc., Osborne-Kemper-Thomas, a Division of  
UMC Industries, Inc., Unidynamics/St. Louis, a  
Subsidiary of UMC Industries, Inc., UMC/Electropics, a  
Subsidiary of UMC Industries, Inc.

Note: The additional named insured endorsement states that it does not apply to Hawaii, Louisiana, Missouri, New Jersey or Texas operations.

Coverage:

Coverage is provided on an "occurrence" basis.

Definition of  
Occurrence:

"An accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured. All bodily injury and property damage arising out of continuous or repeated exposure to substantially the same general conditions shall be considered as arising out of one occurrence."

Pollution  
Exclusion:

"To bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental."

Exhaustion  
of Aggregate  
Limits:

"The company shall not be obligated to pay any claim or judgment or defend any suit after the applicable limit of the company's liability has been exhausted by payment of judgment or settlement."

UNDYNAMICS

Register of Primary Liability Policies

1/1/76 - 1/1/77

NOT AVAILABLE

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF  
WISCONSIN (WAUSAU)

Policy Period: 1/1/77 - 1/1/78

Policy Number: 0728 03 042240

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate

Deductible: None

Broker: Marsh & McLennan, Inc., Stamford, CT

Source: Original policy

Named Insured: UMC Industries, Inc.  
Additional named insureds: Unidynamics/St. Louis, a  
Subsidiary of UMC Industries, Inc., 472 Paul Avenue,  
Ferguson, Missouri

Note: The additional named insured endorsement states  
that it does not apply to Hawaii, Louisiana, Missouri,  
New Jersey or Texas operations.

Coverage: Coverage is provided on an "occurrence" basis.

Definition of Occurrence: "An accident, including continuous or repeated exposure  
to conditions, which results in bodily injury or  
property damage neither expected nor intended from the  
standpoint of the insured. All bodily injury and  
property damage arising out of continuous or repeated  
exposure to substantially the same general conditions  
shall be considered as arising out of one occurrence."

Pollution  
Exclusion:

"To bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental."

Products  
and Completed  
Operations  
Hazard  
Exclusion:

"It is agreed that such insurance as is afforded for bodily injury liability coverage and property damage liability coverage does not apply to the bodily injury and property damage included within the completed operations hazard or the products hazard."

Exhaustion  
of Aggregate  
Limits:

"The company shall not be obligated to pay any claim or judgment or defend any suit after the applicable limit of the company's liability has been exhausted by payment of judgment or settlement."

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF  
WISCONSIN (WAUSAU)

Policy Period: 1/1/78 - 4/1/79

Policy Number: 0529 00 090588

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate

Deductible: None

Broker: Marsh & McLennan, Inc., Stamford, CT

Source: Original policy

Named Insured: UMC Industries, Inc.  
Additional Named Insureds: Unidyamics/St. Louis, a  
Subsidiary of UMC Industries, Inc., 472 Paul Avenue,  
Ferguson, Missouri

Note: This additional named insured endorsement does  
not apply to Hawaii, Louisiana, Missouri, New Jersey or  
Texas operations.

Coverage: Coverage is provided on an "occurrence" basis.

Definition of Occurrence: "An accident, including continuous or repeated exposure  
to conditions, which results in bodily injury or  
property damage neither expected nor intended from the  
standpoint of the insured. All bodily injury and  
property damage arising out of continuous or repeated  
exposure to substantially the same general conditions  
shall be considered as arising out of one occurrence."

Pollution  
Exclusion:

"To bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental."

Products and  
Completed  
Operations  
Hazard  
Exclusion:

"It is agreed that such insurance as is afforded for bodily injury liability coverage and property damage liability coverage does not apply to the bodily injury and property damage included within the completed operations hazard or the products hazard."

Exhaustion  
of Aggregate  
Limits:

"The company shall not be obligated to pay any claim or judgment or defend any suit after the applicable limit of the company's liability has been exhausted by payment of judgment or settlement."

General  
Comments:

Policy expiration date extended from 1/1/79 to 4/1/79.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF  
WISCONSIN (WAUSAU)

Policy Period: 4/1/79 - 4/1/80

Policy Number: 0520 00 090588

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate

Deductible: None

Broker: Marsh & McLennan, Inc., Stamford, CT

Source: Original policy

Named Insured: UMC Industries, Inc.  
Additional Named Insureds: Unidynamics/St. Louis, a  
Subsidiary of UMC Industries, Inc., 472 Paul Avenue,  
Ferguson, Missouri.

Note: This additional named insured endorsement does  
not apply to Hawaii, Louisiana, Missouri, New Jersey or  
Texas operations.

Coverage: Coverage is provided on an "occurrence" basis.

Definition of Occurrence: "An accident, including continuous or repeated exposure  
to conditions, which results in bodily injury or  
property damage neither expected nor intended from the  
standpoint of the insured. All bodily injury and  
property damage arising out of continuous or repeated  
exposure to substantially the same general conditions  
shall be considered as arising out of one occurrence."



Pollution  
Exclusion:

"To bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental."

Products and  
Completed  
Operations  
Hazard  
Exclusion:

"It is agreed that such insurance as is afforded for bodily injury liability coverage and property damage liability coverage does not apply to the bodily injury and property damage included within the completed operations hazard or the products hazard."

Exhaustion  
of Aggregate  
Limits:

"The company shall not be obligated to pay any claim or judgment or defend any suit after the applicable limit of the company's liability has been exhausted by payment of judgment or settlement."

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: EMPLOYERS INSURANCE OF WAUSAU

Policy Period: 4/1/80 - 4/1/81

Policy Number: 0521 00 090588

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate

Deductible: \$1,000 each claim

Broker: Unknown

Source: Policy

Named Insured: UMC Industries, Inc.  
Additional Named Insureds: "Any wholly owned subsidiary corporation of the named insured and any other corporation in which the named insured has ownership of more than 50 percent provided that the insurance afforded any such named insured not specifically named herein shall be excess insurance over any other valid and collectible insurance available to such named insured."  
  
Note: This additional named insured endorsement does not apply to Hawaii, Louisiana, Missouri, New Jersey, or Texas operations.

Coverage: Coverage is provided on an "occurrence" basis.

Definition of  
Occurrence:

"An accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured."

Pollution  
Exclusion:

"To bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental."

Products and  
Completed  
Operations  
Hazard  
Exclusion:

"It is agreed that such insurance as is afforded for bodily injury liability coverage and property damage liability coverage does not apply to the bodily injury and property damage included within the completed operations hazard or the products hazard."

UNIDYNAMICS

Register of Excess Liability Policies

Carrier: EMPLOYERS INSURANCE OF WAUSAU

Policy Period: 4/1/81 - 4/1/82

Policy Number: 0522 00 090588

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate

Deductible: None

Broker: Marsh & McLennan, Inc., Stamford, CT

Source: Endorsement amending the names of additional insureds.

Named Insured: "Any wholly owned subsidiary corporation of the named insured and any other corporation in which the named insured has ownership of more than 50 percent provided that the insurance afforded any such named insured not specifically named herein shall be excess insurance over any other valid and collectible insurance available to such named insured."

General Comments: Original policy missing. No other policy details available.

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: EMPLOYERS INSURANCE OF WAUSAU

Policy Period: 4/1/82 - 4/1/83

Policy Number: 0523 00 090588

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate

Deductible: None

Broker: Marsh & McLennan, Inc., Stamford, CT

Source: Original policy

Named Insured: UMC Industries, Inc.  
Additional named insured: Any wholly owned subsidiary corporation of the named insured and any other corporation in which the named insured has ownership of more than 50 percent provided that the insurance afforded any such named insured not specifically named herein shall be excess insurance over any other valid and collectible insurance available to such named insured.

Note: This additional named insured endorsement does not apply to Hawaii, Louisiana, Missouri, New Jersey or Texas operations.

Coverage: Coverage is provided on an "occurrence" basis.

Definition of  
Occurrence:

"An accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured. All bodily injury and property damage arising out of continuous or repeated exposure to substantially the same general conditions shall be considered as arising out of one occurrence."

Pollution  
Exclusion:

"To bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental."

Products and  
Completed  
Operations  
Hazard  
Exclusion:

"It is agreed that such insurance as is afforded for bodily injury liability coverage and property damage liability coverage does not apply to the bodily injury and property damage included within the completed operations hazard or the products hazard."

Exhaustion  
of Aggregate  
Limits:

"The company shall not be obligated to pay any claim or judgment or defend any suit after the applicable limit of the company's liability has been exhausted by payment of judgment or settlement."

Errors and  
Omissions:

"It is agreed that the failure of the insured to disclose all hazards existing as of the inception date of the policy shall not prejudice the insured with respect to the coverage afforded by this policy provided such failure or omission is not intentional."

UNIDYNAMICS

Register of Primary Liability Policies

Carrier: EMPLOYERS INSURANCE OF WAUSAU

Policy Period: 4/1/83 - 4/1/84

Policy Number: 0524 00 090588

Policy Type: Blanket Liability

Limits of Liability: \$1,000,000 combined single limit each occurrence  
\$1,000,000 aggregate

Deductible: None

Broker: Marsh & McLennan, Inc., Stamford, CT

Source: Original policy

Named Insured: UMC Industries, Inc.  
Additional named insured: Any wholly owned subsidiary corporation of the named insured and any other corporation in which the named insured has ownership of more than 50 percent provided that the insurance afforded any such named insured not specifically named herein shall be excessive insurance over any other valid and collectible insurance available to such named insured.

Note: This additional named insured endorsement does not apply to Hawaii, Louisiana, Missouri, New Jersey or Texas operations.

Coverage: Coverage is provided on an "occurrence" basis.

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Crab Orchard, Williamson County, Illinois

AFFIDAVIT

William C. Donahue, being duly sworn deposes and says:

1. That I am the Director of Human Resources of Unidynamics/Phoenix, Inc. a Delaware Corporation (the "Corporation") with offices at 1000 North Litchfield Road, Goodyear, Arizona and that I have been employed by the Corporation since July, 1962.
2. The Corporation is a 100% owned subsidiary of Unidynamics Corporation which in turn is a wholly-owned subsidiary of Crane Co.
3. That I am generally familiar with the Crab Orchard Plant Site ("Site") which was leased by the predecessor of the Corporation from approximately 1952 to 1963.
4. That a diligent record search relating to the Site has been completed and there has been a diligent interviewing process of present and former employees of the Corporation who have knowledge of the Site. The searches and interviews were conducted in the context of a site on which the Corporation terminated its lease and left more than 25 years ago.
5. That I have reviewed the accompanying Response to Information Request, dated September 14, 1989, which was prepared under my supervision except for the financial and insurance information which was supplied by Unidynamics Corporation and to the best of my personal knowledge the information supplied therein is true.

William C. Donahue  
William C. Donahue

Sworn to before me  
this 14th day of September, 1989

Mary Ellen Sellman  
Notary Public My Commission Expires March 31, 1993

1816C